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Avionic Authentication Project

Naval Postgraduate School (U.S.)

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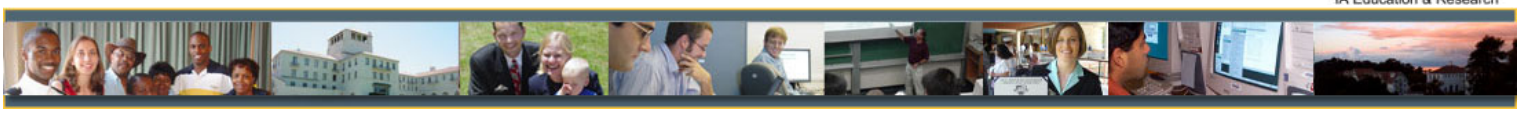

Research: Projects: Avionic Authentication

Avionic Authentication Project
This project will design and develop a prototype for continuous authentication of aircraft personnel in order to determine whether the persons flying a given aircraft are authorized to do so.

When in service, the security of a commercial aircraft may affect the well being of many people. Recent events in aviation have highlighted the need to understand the security status of an airborne vehicle at all times. A significant part of the aircraft status is the minute-to-minute situation in the cockpit area. It is important for cabin and ground control personnel to be able to know who is in control of the aircraft at all times.

This research will investigate how various biometric and other technologies may be suitable for continuous authentication of personnel in an enclosed area, and design and develop a prototype for applying those devices to the aviation authentication problem. Critical technical factors effecting feasibility of different authentication technologies will be assessed, including the required computing power, the false positive rates, and how to store, communicate and protect the authentication and status data.

There are three fundamental methods of individual authentication: what you "know" (e.g., a password), what you "have" (e.g., a smart-card), and what you "are" (viz., your biological traits). Each of these methods has particular strengths, and the common wisdom is that a combination two or more provides the strongest authentication. A primary focus of this project will be to investigate the state of the art for biometric devices, and to determine what is the best combination of methods to provide continuous authentication of aircraft cockpit personnel.

It is anticipated that the results of this research will have application in other critical military and civilian activities that require continuous personnel authentication.

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